

Heavy vehicle specialist inspector's or manufacturing inspecting organisation's name (PRINT IN CAPS) **JOHN HIRST** ID **JEH**

Vehicle registration (optional) _____ VIN/Chassis number **7 A 9 E 3 5 0 1 2 J 1 0 2 3 8 0 0**

Make **DOMETT TRAILERS** Component being certified: Chassis Load anchorage
 Model (optional) _____ Log bolsters Towing connection Brakes
 Certification category **HVEK** SRT PSV stability PSV rollover
 Swept path PBS

Description of work
CERTIFY TO SCHEDULE 5 OF LTR 32015/4
RSS ON: TWIN TYRES / SUPER SINGLES SIZE = 265 70 R 19.5
THE 3RD & 5TH AXLES WILL RETRACT @ TARE WEIGHT. THE RETRACTED AXLES WILL
AUTOMATICALLY LOWER WHEN THE REAR AXLE GROUP AIR BAG PRESSURE = BAR

Code/standard/rule certified to **LTR 32015/4** Component load rating(s) **32 Tonnes GVM**
35 Tonnes (Group ratings)
 General drawing number(s) **N/A**

Supporting documents
BRAKE CODE CERTIFICATE JH181111
BRAKE CALCULATION # TP51803

Special conditions (optional)
WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON & THEN
EXTINGUISH IMMEDIATELY OR WHEN VEHICLE SPEED EXCEEDS 7 KPH

Certification expiry date (if applicable) **N/A [UNLESS MODIFIED]** or Hubodometer reading (whichever comes first) _____

Declaration

I the undersigned, declare that I am the heavy vehicle specialist inspector identified and I hold a current valid appointment. I certify that the above mentioned vehicle component's design, manufacture and installation, and this certification complies in all respects with the Land Transport Rule: Vehicle Standards Compliance 2002 and my appointment. To the best of my knowledge the information contained in the certificate is true and correct.

Designer's ID (if different from inspector below) _____
 Inspector's signature 
 Inspector's name (PRINT IN CAPS) **JOHN HIRST** ID number **JEH**
 Date **09-Nov-18** Number **661966**

CoF vehicle inspector ID (if applicable) _____ CoF vehicle inspector signature (if applicable) _____ Date _____

All fields are mandatory unless otherwise stated.

HEAVY VEHICLE BRAKE RULE
32015/4 WORKSHEET
(PROCEDURE DOCUMENTATION SHEET-PDS)
&
CONFIRMATION OF COMPLIANCE

CERTIFICATE NO. **JH181111**

CUSTOMER NAME **DOMETT TRAILERS LTD**

CUSTOMER ORDER NO. **6024** DATE RECEIVED **09-Nov-18**

VEHICLE TYPE **TIPPER**

VIN/ CHASSIS NO. **7A9E35012J1023800**

BRIEF SPECIFICATION AS CERTIFIED TO SCHEDULE 5

<u>BRAKE VALVES</u>	<u>MAKE</u>	<u>TYPE</u>
PRIMARY RELAY	WABCO	480 102 08. 0
SECONDARY RELAY	WABCO	480 207 202 0
YARD RELEASE VALVE	WABCO	971 002 900 0
PARK BRAKE VALVE	WABCO	971 002 900 0
<u>SUSP. VALVES [WABCO]</u>	<u>FRONT</u>	<u>REAR</u>
CONTROL	441 044 101 0	463 090 500 0
DISTANCE SENSOR	464 008 011 0	441 050 100 0

OTHER VALVES:

MAKE: <u>WABCO</u>	TYPE: <u>461 513 002 0</u>	SETTING: <u>5.5 Bar</u>
MAKE: <u>WABCO</u>	TYPE: <u>446 192 110 0</u>	SETTING: <u>SMARTBOARD</u>
MAKE: <u>WABCO</u>	TYPE: <u>463 084 050 0</u>	SETTING: <u>LACV [12V]</u>
MAKE: <u>WABCO</u>	TYPE: <u>446 290 700 0</u>	SETTING: <u>OPTILINK</u>

BRAKE CHAMBERS:

AXLE 1 & 2

AXLE 3 & 4

AXLE 5

MAKE

TSE

TSE

TSE

SIZE

20HSCLD65

1416HTLD64

14HSCLD64

MAX STROKE (mm)

65

64

64

SLACK LENGTH (mm)

69

69

69

DRUM TYPE:

N/A

N/A

N/A

OR

BRAKE CALIPER:

SBW1937

SBW1937

SBW1937

FRICTION MATERIAL:

OEM

AFTERMARKET

LINING BRAND

AXLE 1 & 2

AXLE 3 & 4

AXLE 5

JURID 539

JURID 539

JURID 539

OTHERS:

TYRES:

FRONT

REAR

265 70 R 19.5

265 70 R 19.5

BRAKE CALCULATION #:

TP51803

COMMENTS:

EBS, SPECIAL CONDITIONS APPLY. SEE INSTRUCTIONS ON LT400 #

661966

SALES ORDER #:

SO1343380

PROCESS TIME:

1 Hour

TRAILERS EQUIPPED WITH PREV: THE PARK BRAKE PERFORMANCE MUST BE

MEASURED BY PULLING THE RED ACTUATION KNOB ON THE PREV VALVE WHEN

THE AXLES - EQUIPPED WITH SPRING BRAKES - ARE IN THE BRAKE ROLLERS. THE

PARK BRAKE IN THE CAB **MUST NOT BE APPLIED.**

NOTES:

CHAMBERS & PARK BRAKE PERFORMANCE:

REFER TO BRAKE CALCULATION TP5: z = @ (N) for 35 050 kgs GVM

FRONT FRICTION (μ) = 0.49

****LIFT AXLE PARAMETERS TO BE SET AT SIGN-OFF****

CONFORMATION OF COMPLIANCE

I CONFIRM THAT THE VEHICLE IDENTIFIED IN PAGES 1 AND 2 OF THIS CONFORMATION OF COMPLIANCE COMPLIES WITH ALL RELEVANT REQUIREMENTS OF THE CURRENT NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015/4, SCHEDULE 5.

DATE: 09-Nov-18

SIGNED: (pp)



NAME & ID: J HIRST (JEH)

PHONE (BUS): 09 980 7300

FAX (BUS) 09 980 7306

POSTAL ADDRESS:

TRANSPORT SPECIALTIES LTD
PO BOX 98-971,
MANUKAU CITY,
MANUKAU 2241

POSITION: BRAKE CERTIFIER HVEK

I CONFIRM THE BRAKE SYSTEM OF THE VEHICLE IDENTIFIED IN PAGE 1 OF THIS STATEMENT OF COMPLIANCE AS MODIFIED BY MYSELF, CONTINUES TO COMPLY WITH ALL THE RELIVANT REQUIREMENTS OF THE CURRENT NEW ZEALAND HEAVY BRAKE RULE 32015/4 SCHEDULE 5.

DATE:

SIGNED:

NAME:

CERTIFIERS ID:

POSITION:

PHONE (BUS):

FAX (BUS):

COMMENTS:

.....
.....
.....
.....

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an Electronic Brake System.

To comply with the New Zealand Heavy Vehicle Brake Rule 32015/4, it must be used only in conjunction with a truck/tractor equipped with a 5 or 7 pin ABS/EBS power supply socket.

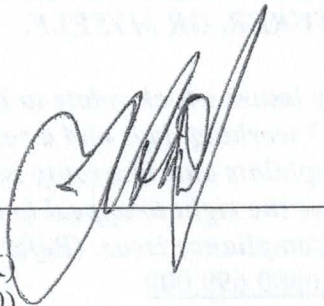
Failure to connect to such supply invalidates Brake Rule compliance.

The trailer ABS/EBS warning light on the towing vehicle dashboard must illuminate when the ignition is switched on and extinguish when the vehicle is in motion.

If the light does not illuminate when ignition is switched on, the system must be checked. If the light remains illuminated when the vehicle is in motion, Brake Rule compliance is compromised. Repairs must be made as soon as possible.

If you are unsure of your responsibilities and/or obligations, please contact either the vehicle manufacturer or myself.

(p.p.)
J E Hirst
(JEH HVEK)
(09 980 7300)





NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE LAND TRANSPORT HEAVY VEHICLE BRAKE RULE 32015/4.

IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CERTIFIED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM LAND TRANSPORT RULE; HEAVY-VEHICLE BRAKES RULE 32015/4. SECTION 10,

10.1 RESPONSIBILITIES OF OPERATORS

A person who operates a vehicle must ensure that the vehicle complies with this rule.

10.2 RESPONSIBILITIES OF REPAIRERS

A person who repairs or adjusts a brake must ensure that the repair or adjustment:

- a) does not prevent the vehicle from complying with this rule;
- b) complies with Land Transport Rule: Vehicle Repair 1998.

10.3 RESPONSIBILITIES OF MODIFIERS

A person who modifies a vehicle so as to affect the braking performance of the vehicle must:

- a) ensure that the modification does not prevent the vehicle from complying with this Rule; and
- b) notify the operator that the vehicle must be inspected and, if necessary, certified by person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.

IF YOU ARE UNSURE ABOUT YOUR RESPONSIBILITIES, PLEASE CONTACT THE VEHICLE MANUFACTURER, OR MYSELF.

COMPLAINTS. Complaints and Warranty issues which relate to Brake Certification will be acknowledged within 7 working days and a resolution proposed within 25 working days. Resolution of complaints and Warranty issues is subject to Transpecs Warranty policy. Customers have the right to appeal to the New Zealand Transport Authority if dissatisfied with a Compliance issue. (Refer NZTA Deed Of Appointment Para 47.4) NZTA Helpdesk 0800 699 000

(p.p.).....
(J.Hirst (JEH) HVEK)

trailer (full, semi-, centre-axle) with air brake system acc. to UN/ECE-R.13.11

distribution: DOMETT TRAILERS
7A9E35012J1023800
JH181111
LT400: 661966

please note!

This brake calculation is made under consideration of
-the legal precriptions mentioned above in the version valid at the time of making the program (V6.14.04.20).
-the functional characteristics of our products as well as the data of the brake out of the test approvals of the axle manufacturers, and
-the other vehicle data included in the brake calculation.
Please check whether these data correspond to the actual vehicle data.
Our conditions of delivery apply (particularly section 9.0).
In any case we commend to do a braking harmonisation!
WABCOBrake V6.14.04.20 db 03.11.2017

vehicle manufacturer: DOMETT TRAILERS
trailer model : 5AFT TIPPER
trailer type : 5-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS E
TRISTOP 3+4: T.14/24 [TSE1416HTLD64 ACTUALLY FITTED -
SEE PAGE 7 FOR PERFORMANCE DATA]
265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : SAF, SBW 1937, TDB 0749 ECE,

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	6590	35050
axle 1	P1 in kg	1570	8000
axle 2	P2 in kg	1570	8000
axle 3	P3 in kg	1150	6350
axle 4	P4 in kg	1150	6350
axle 5	P5 in kg	1150	6350
wheel base	E in mm	5300 - 5300	
centre of gravity height	h in mm	1075	1950

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>	<u>axle 5</u>
no. of combined axles	1	1	1	1	1
no. of brake chambers per axle line KDZ	2	2	2	2	2
The power output corresponds to	BZ 122.1	BZ 122.1	BZ 119.6	BZ 119.6	BZ 122.1
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor	Meritor
chamber size	20.	20.	T.14/24	T.14/24	14.
lever length lBh in mm	69	69	69	69	69
brake factor [-]	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius rdyn min in mm	421	421	421	421	421
dyn. rolling radius rdyn max in mm	421	421	421	421	421
threshold torque Co Nm	6.0	6.0	6.0	6.0	6.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar	2.4	2.4	2.0	2.0	2.0
chamber pressure(rdyn max)pH at z=22,5%bar	2.4	2.4	2.0	2.0	2.0
chamber press.(servo)pcha at pm6,5bar bar	6.6	6.6	4.2	4.2	4.2
piston force ThA at pm6,5bar N	7687	7687	3984	3984	3984
brake force(rdyn min)T lad. at pm6,5bar N	58227	58227	30080	30080	30080
brake force(rdyn max)T lad. at pm6,5bar N	58227	58227	30080	30080	30080
brake force within 1 % rolling friction proportion %	22.3	22.3	18.5	18.5	18.5

braking rate z laden 0.601 for rdyn min
z = sum (TR)/PRmax 0.601 for rdyn max

Trailer may only be operated in combination with trucks/tractors with ISO 7638 supply (5 or 7 polar).

brake diagram :

maximum pressure: 8.5 bar

axle 1:

valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 20HSCLD65

axle 2:

valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 20HSCLD65

axle 3:

valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 102 ... 0 WABCO
EBS trailer modulator

brake cylinder: Meritor 1424HTLD64

axle 4:

valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 102 ... 0 WABCO
EBS trailer modulator

brake cylinder: Meritor 1424HTLD64

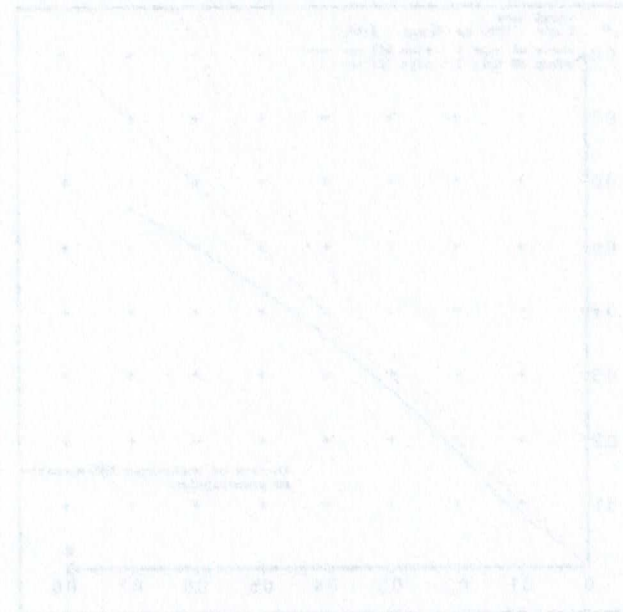
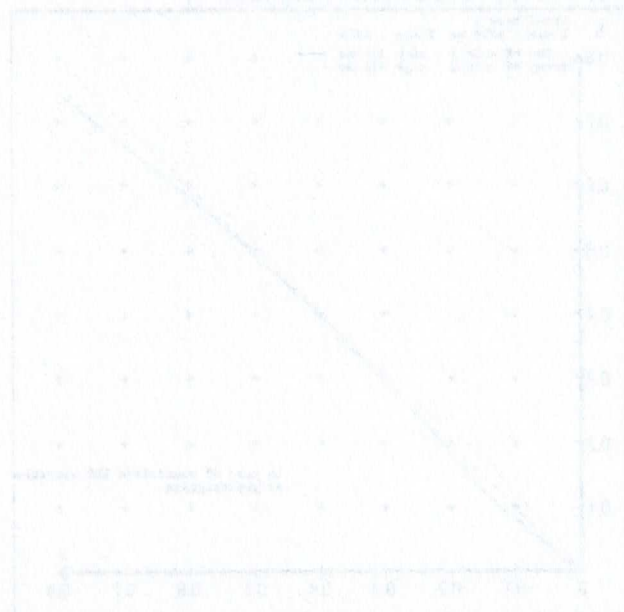
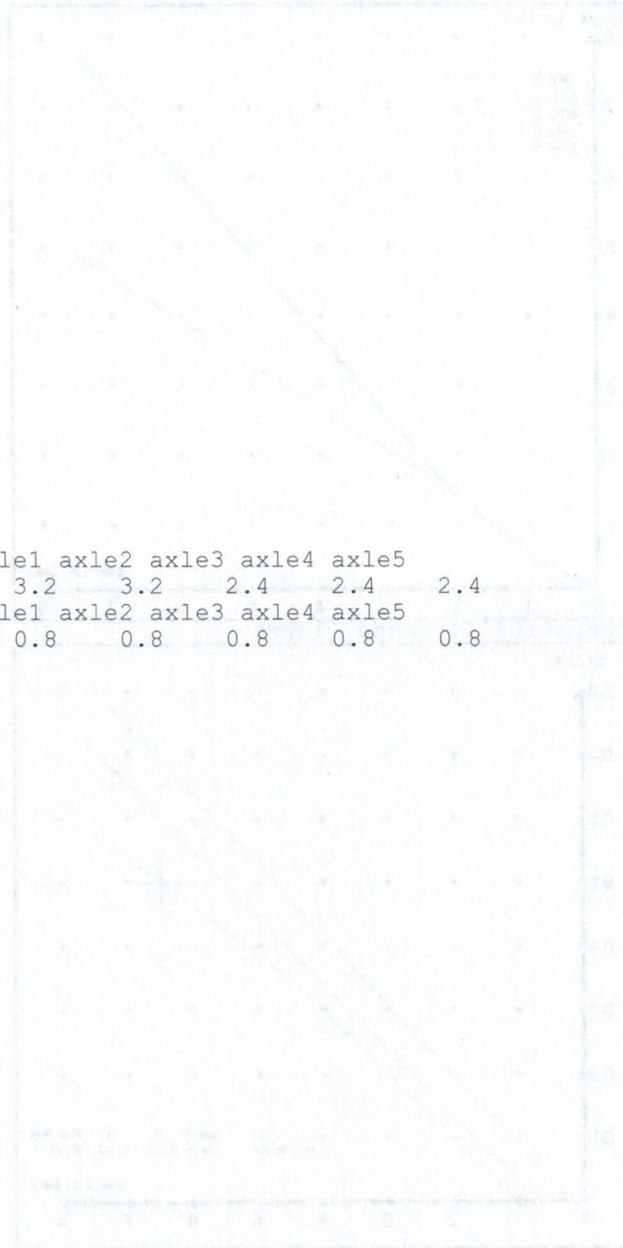
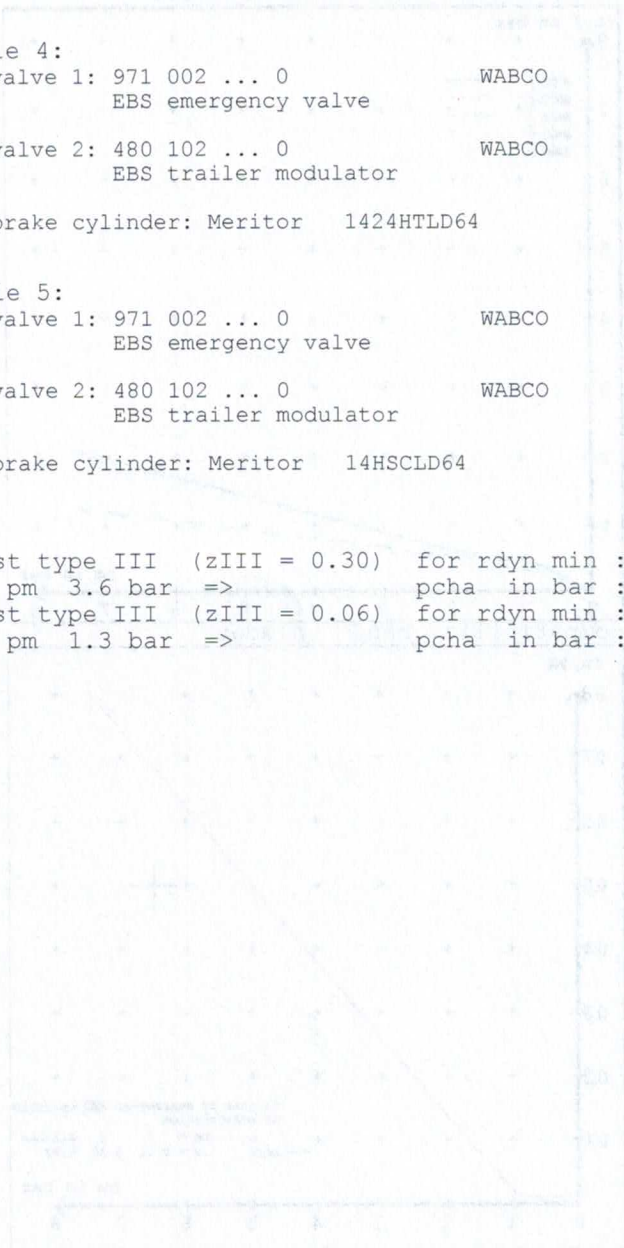
axle 5:

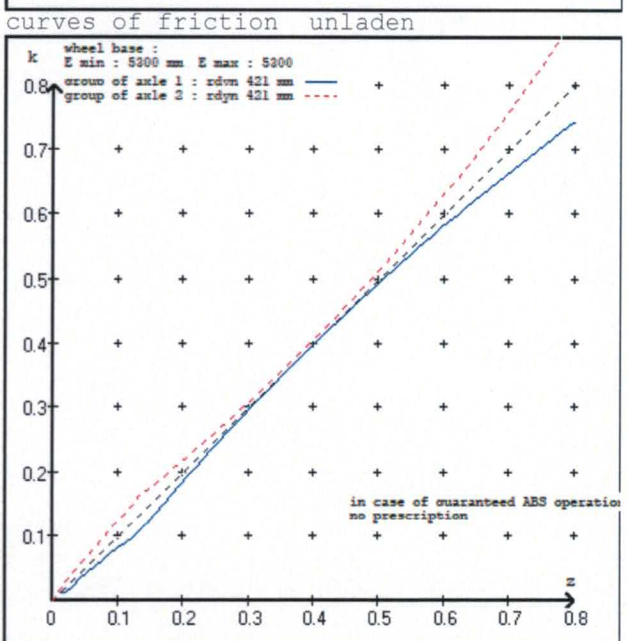
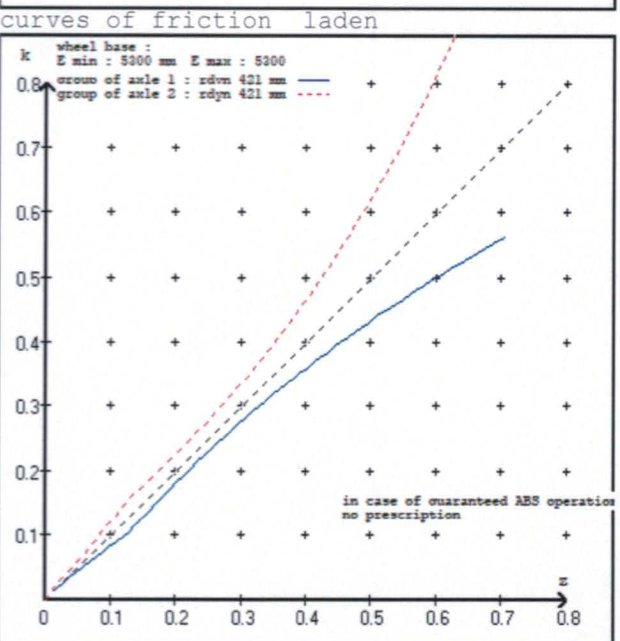
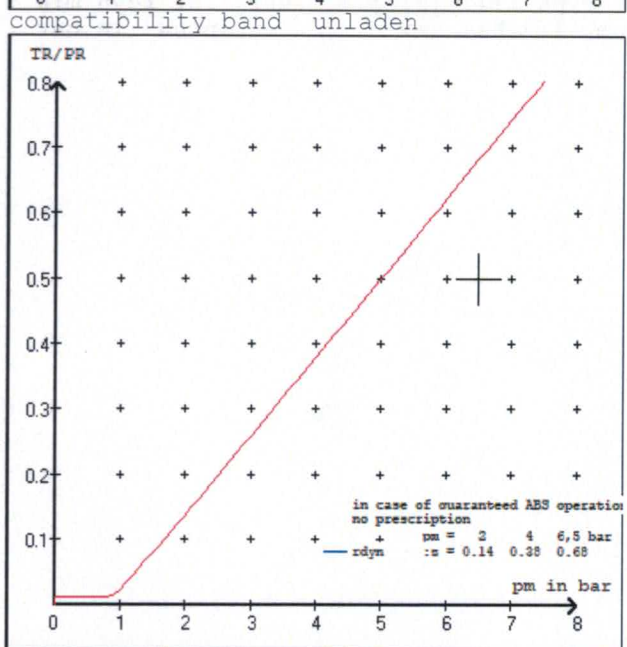
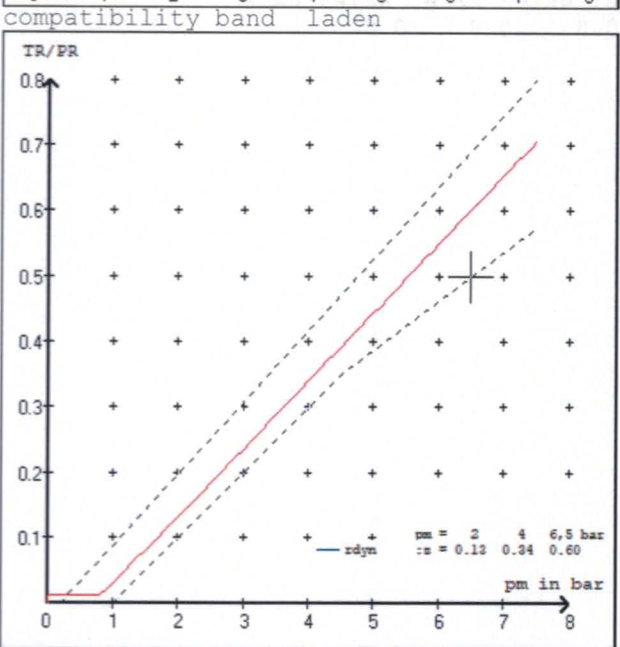
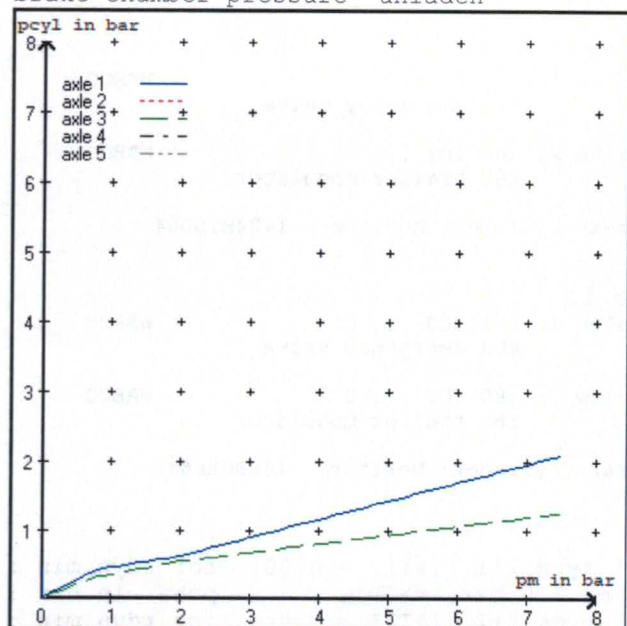
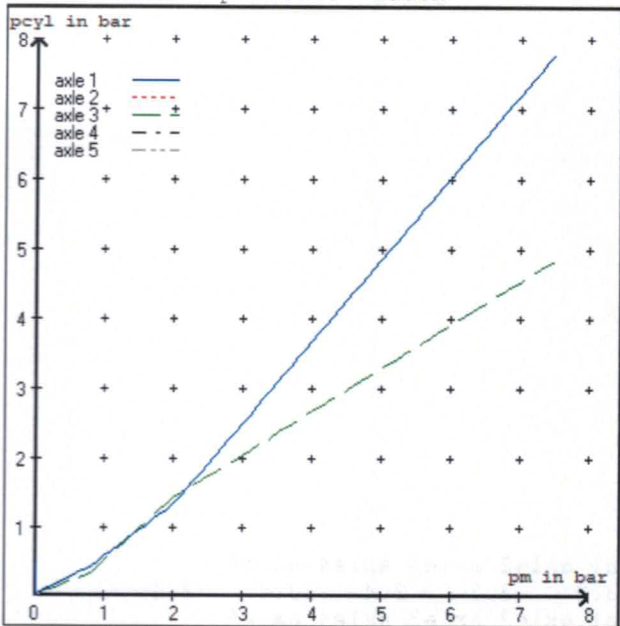
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 102 ... 0 WABCO
EBS trailer modulator

brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 3.6 bar =>	pcha in bar :	3.2	3.2	2.4	2.4	2.4
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 1.3 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8





vehicle manufacturer: DOMETT TRAILERS
 trailer model : 5AFT TIPPER
 trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 20. (Meritor) lever length 69 mm
 axle 2 : 2 x type/diameter 20. (Meritor) lever length 69 mm
 axle 3 : 2 x type/diameter T.14/24 (Meritor) lever length 69 mm
 axle 4 : 2 x type/diameter T.14/24 (Meritor) lever length 69 mm
 axle 5 : 2 x type/diameter 14. (Meritor) lever length 69 mm

brake diagram :

valve :
 971 002 ... 0 WABCO EBS emergency valve
 480 207 0.. 0 WABCO EBS relay valve or 480 207 2.. 0
 480 102 ... 0 WABCO EBS trailer modulator

EBS input data

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vehicle manufacturer: DOMETT TRAILERS
 trailer model : 5AFT TIPPER
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 51803A

tire circumference main axle : 2650 for rdyn max
 tire circumference auxiliary axle : 2650 for rdyn max

assignment pm / deceleration z: pm 0.8 bar z = 0.010
 (laden condition) 2.0 bar z = 0.134
 6.5 bar z = 0.600

control pressure pm			6,5	control pressure pm			0.8	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden			
1	1570	to be	1.8	8000	to be	0.4	1.3	6.6	
2	1570	entered by the vehicle manufact.	1.8	8000	entered by the vehicle manufact.	0.4	1.3	6.6	
3	1150		1.1	6350		0.3	1.4	4.2	
4	1150		1.1	6350		0.3	1.4	4.2	
5	1150		1.1	6350		0.3	1.4	4.2	

The unladen values indicated in the above table are values for the basic parameter set. Higher unladen axle loads and liftaxles are automatically recognized and do not require separate adjustment. The above unladen axle loads must not be fallen below.

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axle 1		axle 2		axle 3		axle 4		axle 5	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1570	1.8	1570	1.8	1150	1.1	1150	1.1	1150	1.1
2070	2.2	2070	2.2	1650	1.4	1650	1.4	1650	1.4
2570	2.5	2570	2.5	2150	1.7	2150	1.7	2150	1.7
3070	2.9	3070	2.9	2650	2.0	2650	2.0	2650	2.0
3570	3.3	3570	3.3	3150	2.3	3150	2.3	3150	2.3
4070	3.7	4070	3.7	3650	2.6	3650	2.6	3650	2.6
4570	4.0	4570	4.0	4150	2.9	4150	2.9	4150	2.9
5070	4.4	5070	4.4	4650	3.2	4650	3.2	4650	3.2
8000	6.6	8000	6.6	6350	4.2	6350	4.2	6350	4.2

data sheet to ECE vehicle type-approval certificate concerning braking equipment: according to ECE R13 annex 11

axle 1 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 2 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 3 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 4 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 5 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013

calc. verif. of residual (hot) braking force type III
(item 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 26.7 % Fe
axle 2	(rdyn 421 mm)	T = 26.7 % Fe
axle 3	(rdyn 421 mm)	T = 16.5 % Fe
axle 4	(rdyn 421 mm)	T = 16.5 % Fe
axle 5	(rdyn 421 mm)	T = 16.5 % Fe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix 2 to annex 11)

axle 1	(sp = 58 mm)	s = 39 mm
axle 2	(sp = 58 mm)	s = 39 mm
axle 3	(sp = 56 mm)	s = 39 mm
axle 4	(sp = 56 mm)	s = 39 mm
axle 5	(sp = 56 mm)	s = 39 mm

average thrust output in N at pm = 6,5 bar (however max. pcha = 7,0 bar)

axle1	ThA = 7687 N
axle2	ThA = 7687 N
axle3	ThA = 3984 N
axle4	ThA = 3984 N
axle5	ThA = 3984 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 45449 N
axle 2	(rdyn 421 mm)	T = 45449 N
axle 3	(rdyn 421 mm)	T = 23573 N
axle 4	(rdyn 421 mm)	T = 23573 N
axle 5	(rdyn 421 mm)	T = 23573 N

basic test of subject trailer (E) type III (calculated) residual

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11) 0.60 (hot)braking 0.47

required braking rate (items 1.5.3 and 1.7.2 to annex 11) >= 0,4 and >= 0,6*E (0.36)

axle 1	(rdyn 421 mm)	T = 45449 N
axle 2	(rdyn 421 mm)	T = 45449 N
axle 3	(rdyn 421 mm)	T = 23573 N
axle 4	(rdyn 421 mm)	T = 23573 N
axle 5	(rdyn 421 mm)	T = 23573 N

basic test of subject trailer (E) type III (calculated) residual

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11) 0.60 (hot)braking 0.47

required braking rate (items 1.5.3 and 1.7.2 to annex 11) >= 0,4 and >= 0,6*E (0.36)

spring parking brake

	axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/16	T.14/16
lever length lBh in mm	69	69
stat. tyre radius rstat max in mm	401	401
at a stroke of s in mm	30	30
min. force of spring brake TFZ in N	6160	6160
sp.brake chamber no Meritor.....	4	4
release pressure pLs in bar	4.8	4.8

calculation:

ratio until road	3.9674	3.9674
$iFb = lBh * \eta * C * rBt / (rBn * rstat)$ for rstat in mm	401	401
brake force of spring br. Tf in N	48188	48188
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$		

braking rate zf laden 0.290
 $zf = \text{sum}(Tf) / P + 0,01$

Test of the frictional connection required by the parking brake

minimum wheelbase/minimum supporting width min Ef necessary
to fulfil the regulations

$$\min Ef = E * (1 - PR/P + zferf * h/E) / (1 - zferf / (fzul * nf/ng))$$

min Ef = 4182 mm for E = 5300 mm
=====

min Ef = 4182 mm for E = 5300 mm
=====

- min Ef = minimum distance between front axle(s) (trailer) or support (semitrailer) and the rear axle(s) (resultant of the bogie)
- E = wheel base
- fzul = 0.80 maximum permissible frictional connection required
- zferf = 0.18 maximum required braking ratio of the parking brake
- h = 1950 mm height of center of gravity - laden
- PR = 19050 kg maximum bogie mass - laden
- P = 35050 kg maximum total mass - laden
- nf = 2 no. of axle(s) with TRISTOP spring brake actuators
- ng = 3 no. of bogie axle(s)

reference values

reference values for z = 50% for max rdyn: 421 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0	5061	
	6.6	48441	
axle 2	1.0	5061	
	6.6	48441	
axle 3	1.0		4864
	4.2		25025
axle 4	1.0		4864
	4.2		25025
axle 5	1.0		4864
	4.2		25025

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	20./	20./	T.14/24	T.14/24	14./
Maximum stroke smax = ...mm maximaler Hub smax =mm	65	65	64	64	64
Lever length =mm Hebellänge =mm	69.08	69.08	69.08	69.08	69.08

